

**REMARKS**

This Amendment and Response to Final Office Action is being submitted in response to the final Office Action mailed January 18, 2007. Claims 1-15 are pending in the Application.

Claims 8 and 9 are objected to for containing informalities. Claims 1-15 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 1, 3, 5-9, and 13-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Arecco *et al.* (U.S. Patent No. 7,072,580 B2) in view of Elie-Dit-Cosaque *et al.* (U.S. Patent Application Pub. No. 2004/0246892 A1). Claims 2, 4, 10, and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Arecco *et al.* and Elie-Dit-Cosaque *et al.* as applied to claims 1, 3, 5-9, and 13-15, and further in view of Cadeddu *et al.* (U.S. Patent No. 5,647,035).

In response to the above rejections, Claims 1, 5, 8, 9, and 13 have been amended to further clarify the subject matter which Applicants regard as the invention, without prejudice or disclaimer to continued examination on the merits. These amendments are fully supported in the Specification, Drawings, and Claims of the Application and no new matter has been added. Based upon the amendments, reconsideration of the Application is respectfully requested, without further search, in view of the following remarks.

**Objection to Claims 8 and 9**

Applicants have made corrections as requested by Examiner on p. 2 of the final Office Action.

**Rejection of Claims 1-15 under 35 U.S.C. §112, first paragraph**

Claims 1-15 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In response to this rejection, Applicants

have removed the “avoiding” limitation in Claim 1 and the “said controller configuring” limitation in Claim 8. Applicants respectfully note that this limitation describes the result of the dropping the channel selected by said determining step from the protecting fiber, and that the “avoiding” limitation is inherent in the method of Claim 1 in the dropping and determining steps. Further, this is inherent in the egress optical switch node of Claims 8 and 9 through the limitations on the controller.

Therefore, Applicants respectfully submit that the rejection of Claims 1-15 under 35 U.S.C. §112, first paragraph, has now been overcome and respectfully request that this rejection be withdrawn, these claims being otherwise allowable.

**Rejection of Claims 1, 3, 5-9, and 13-15 under 35 U.S.C. §103(a) Arecco *et al.* and  
Elie-Dit-Cosaque *et al.***

Claims 1, 3, 5-9, and 13-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Arecco *et al.* (U.S. Patent No. 7,072,580 B2) in view of Elie-Dit-Cosaque *et al.* (U.S. Patent Application Pub. No. 2004/0246892 A1).

Examiner states that Arecco *et al.* disclose in FIG. 1a, FIG. 1b, and FIG. 1c a protection method for an optical method.<sup>1</sup> Further, Examiner states the only difference between Arecco *et al.* and the claimed invention is a channel assignment database. Applicants respectfully disagree. Arecco *et al.* teach “a network ring of a known type under normal conditions, failure condition with a multiplex section shared protection and failure condition with a multiplex section shared protection--transoceanic application.”<sup>2</sup> FIG. 1c of Arecco *et al.* teaches a “MS shared protection ring--transoceanic application” in the Annex A of the Telecommunication standard ITU-T Recommendation G.841.<sup>3</sup>

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<sup>1</sup> See Final OA, page 3

<sup>2</sup> U.S. Patent No. 7,072,580, Col. 10, lines 28-31

<sup>3</sup> U.S. Patent No. 7,072,580, Col. 3, lines 56-60

Applicants submit this is different from the present invention. Arecco *et al.* is utilized in submarine fiber optic links and operates by distributing the protection switching to all nodes with affected traffic, rather than only at the two nodes adjacent to the failure.<sup>4</sup> Arecco *et al.* specifically states:

In brief, a failure is detected at the two nodes adjacent to the failure at the SDH multiplex section layer and, subsequently, the nodes terminating failed links are informed of the failure situation and re-route the corresponding links on the complementary ring arc path, as illustrated in FIG. 1c. In other words, in case of failure, all the transmission links affected by the failure are bridged at their source nodes onto the protection channels that travels away from the failure. When the affected links reach their final destination nodes, they are switched to their original drop point. Therefore, no loopbacks are established and there is no risk of having, in case of failure, restoration transmission paths crossing more times the ocean.<sup>5</sup>

Applicants' invention differs from Arecco *et al.* because it does not distribute protection switching to each node with affected traffic; rather it allows the egress node to drop the affected channels off the protecting fiber directly instead of receiving it off the working fiber (which could require a longer optical pathway). Applicants' dropping step is performed subsequent to a switching operation, and it utilizes the channel assignment database. Arecco *et al.* teach bridging all transmission links affected by a failure at their source nodes onto protection channels and switching them back to the original drop point at the destination node. This specifically does not teach or suggest dropping channels from a protecting fiber after a switching operation. Accordingly, Applicants submit that FIG. 1c does not teach Applicants' invention.

Additionally, Arecco *et al.* teach a method of optically re-routing traffic on a complementary portion of the ring, only reconfiguring nodes managing affected links.<sup>6</sup> Arecco *et al.* can be utilized in place of SDH protection. The present invention operates

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<sup>4</sup> *The TPC-5 Cable Network*, Barnett *et al.*, IEEE Communications Magazine, February 1996, p. 39 (available at <http://www.comsoc.org/ci/private/1996/feb/pdf/Barnett.pdf>)

<sup>5</sup> U.S. Patent No. 7,072,580, Col. 3, lines 60-67 and Col. 4, lines 1-5

<sup>6</sup> U.S. Patent No. 7,072,580, Col. 4, lines 52-60

within the SONET/SDH protection framework. Also, only the egress node is reconfigured to accept the affected traffic off the protection fiber.

Examiner states that Elie-Dit-Cosaque *et al.* teach in FIG. 3a and FIG. 3b to store channel assignment in a database.<sup>7</sup> Applicants submit that Elie-Dit-Cosaque *et al.* teach the database for calculating working paths and protection paths using weighted criteria.<sup>8</sup> While the combination of Arreco *et al.* and Elie-Dit-Cosaque *et al.* teach an optical network with a database, the combination does not teach utilizing the database to enhance optical switching algorithms by dropping channels affected by a failure directly from a protecting fiber.

The prior art reference (or references when combined) must teach or suggest all claim limitations.<sup>9</sup> Specifically, Applicants respectfully submit that the combination does not disclose the determining and dropping steps in Claim 1, and a controller in Claim 8 configured to drop a selected channel from the protecting fiber in response to a switch by access the channel database.

Additionally, a minor amendment has been made to Claims 5 and 13 to change “Synchronous Data Handling” to “Synchronous Digital Hierarchy.”

Therefore, Applicants respectfully submit that the rejection of Claims 1, 3, 5-9, and 13-15 are rejected under 35 U.S.C. §103(a) as unpatentable over Arecco *et al.* in view of Elie-Dit-Cosaque *et al.*, has now been overcome and respectfully request that this rejection be withdrawn, these claims being otherwise allowable.

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<sup>7</sup> See Final OA, p. 3

<sup>8</sup> U.S. Patent Appl. No. 2004/0246892A1, FIG. 4

<sup>9</sup> M.P.E.P. §706.02(j)

**Rejection of Claims 2, 4, 10, and 12 under 35 U.S.C. §103(a) Arecco *et al.*, Elie-Dit-Cosaque *et al.*, and Cadeddu *et al.***


Claims 2, 4, 10, and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Arecco *et al.* and Elie-Dit-Cosaque *et al.* as applied to claims 1, 3, 5-9, and 13-15, and further in view of Cadeddu *et al.* The arguments present above apply with equal force here. Therefore, Applicants respectfully submit that the rejection of Claims 2, 4, 10, and 12 are rejected under 35 U.S.C. §103(a) as unpatentable over Arecco *et al.* and Elie-Dit-Cosaque *et al.* as applied to claims 1, 3, 5-9, and 13-15, and further in view of Cadeddu *et al.*, has now been overcome and respectfully request that this rejection be withdrawn, these claims being otherwise allowable.

**CONCLUSION**

Applicants would like to thank Examiner for the attention and consideration accorded the present Application. Should Examiner determine that any further action is necessary to place the Application in condition for allowance, Examiner is encouraged to contact undersigned Counsel at the telephone number, facsimile number, address, or email address provided below. It is not believed that any fees for additional claims, extensions of time, or the like are required beyond those that may otherwise be indicated in the documents accompanying this paper. However, if such additional fees are required, Examiner is encouraged to notify undersigned Counsel at Examiner's earliest convenience.

Respectfully submitted,

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